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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
VALENTIN, JUAN D	

ART UNIT	PAPER NUMBER
2877	

DATE MAILED: 08/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/056,321	Applicant(s) TSAO ET AL.	
	Examiner Juan D Valentin II	Art Unit 2877	

-- Th MAILING DATE of this communication appears on the cover sheet with th correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4-6,8-15 and 28* is/are rejected.

7)☒ Claim(s) *3,7 and 16-27* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *2* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1, 2, 4-6, 11-15, & 28 rejected under 35 U.S.C. 103(a) as being unpatentable over Koplow et al. (USPN '301 B1, hereinafter Koplow).

Claim 1

Koplow discloses in conjunction with Fig. 2, a wavelength to optical power converter used for monitoring the wavelength and the optical power in a fiber-optic communication system, comprising a spiral fiber (10) connected to a input fiber pigtail and a cylinder (14) for fixing said spiral fiber. Koplow discloses an optical detector for reading a signal from a output fiber pigtail to generate said optical power, wherein said spiral fiber outputs said optical power in response to said optical wavelength signal, thereby performing a conversion from said wavelength into said optical power (col. 12, line 57-col. 13, line 7). It would have been obvious and well known to someone of ordinary skill in the art at the time of the claimed invention that input and output fiber pigtails are used to interconnect optical waveguiding devices to eachother for optical coupling through optical communication systems. It is further obvious that the ccd array of Koplow is converting an optical wavelength into an electrical intensity signal which is representative of the power of the optical wavelength signal (col. 7, lines 30-38).

Claim 2

Koplow discloses a wavelength to optical power converter wherein said spiral fiber is wrapped around a fixed radius of said cylinder (col. 3, lines 46-48).

Claim 4

Koplow discloses a wavelength to optical power converter wherein said optical wavelength signal includes a wave-band range between 750 nm and 1750 nm (col. 8, lines 65-67 & col. 7, lines 39-43).

Claims 5 & 12

Koplow discloses a wavelength to optical power converter and method wherein said optical wavelength signal is a monochromatic light source having a wave-band range between 750 nm and 1750 nm (col. 7, line 31-34). It is inherently known that a monochromatic light source can be a diode laser.

Claim 6

Koplow discloses a wavelength to optical power converter wherein said optical detector is an optical power reading device (col. 12, lines 58-60).

Claim 11

Koplow in conjunction with Fig. 2, discloses a method for converting a wavelength into an optical power used in a wavelength to optical power converter of a fiber-optic communication system, wherein said wavelength to optical power converter includes an input fiber pigtail, a spiral fiber (12), a cylinder (14), an output fiber pigtail and an optical detector. Koplow discloses inputting a specific wave-band monochromatic light source to said input fiber pigtail and measuring a bending loss of said spiral fiber (col. 6, lines 51-55 & col. 7, lines 30-38).

Koplow discloses regulating a specific parameter and calculating a theory curve and reading a signal via said optical detector to generate an optical power output signal (col. 8, line 43-col. 9, line 21 & col. 12, line 47-col. 13, line 7). It would have been obvious and well known to someone of ordinary skill in the art at the time of the claimed invention that input and output fiber pigtails are used to interconnect optical waveguiding devices to eachother for optical coupling through optical communication systems. It is further obvious that the ccd array of Koplow is converting an optical wavelength into an electrical intensity signal which is representative of the power of the optical wavelength signal (col. 7, lines 30-38).

Claims 13 & 14

Koplow discloses a method wherein said specific parameter includes a bending radius, a winding number and a fiber-optic specification. Wherein said fiber-optic specification includes an admitted level of a fiber-optic to said bending loss thereof which is a variation of said bending loss against different spatial interferences (col. 12, line 47- col. 13, line 7).

Claim 15

Koplow discloses a method wherein said theory curve is a mathematical equation which is a simulated semi-empirical theory curve obtained by getting actual input/output (I/O) values of said fiber-optic communication system and regulating said specific parameter for showing a conversion relationship between said wavelength and said optical power in different input/output (I/O) values (col. 8, line 43- col. 9, line 21).

Claim 28

Koplow discloses in conjunction with Fig. 2, a wavelength to optical power converter used for measuring a wavelength, comprising an input fiber pigtail for inputting an optical

wavelength signal, a spiral fiber (12) connected to said input fiber pigtail, a cylinder (14) for fixing said spiral fiber, an output fiber pigtail extended from said spiral fiber, and an optical detector connected to said output fiber pigtail for reading a signal from said output fiber pigtail to generate an optical power (col. 12, line 57-col. 13, line 7). Koprow discloses wherein said spiral fiber outputs said optical power in response to said optical wavelength signal, thereby performing the conversion from said wavelength into said optical power (col. 12, line 57-col. 13, line 7). It would have been obvious and well known to someone of ordinary skill in the art at the time of the claimed invention that input and output fiber pigtails are used to interconnect optical waveguiding devices to eachother for optical coupling through optical communication systems. It is further obvious that the ccd array of Koplow is converting an optical wavelength into an electrical intensity signal which is representative of the power of the optical wavelength signal (col. 7, lines 30-38).

2. Claims 8 & 9 rejected under 35 U.S.C. 103(a) as being unpatentable over Koprow in view of Dunphy et al. (USPN '956, hereinafter Dunphy).

Claim 8

Koprow substantially teaches the claimed invention except that it fails to show a wavelength to optical power converter further comprising a tunable light source, an optical sensor and a feedback control system of said optical power to form a stabilizing frequency network of a stabilized frequency system of a Wavelength Division Multiplexing (WDM) network. Dunphy shows that it is known to provide a tunable light source, an optical sensor and a feedback control system of said optical power to form a stabilizing frequency network (abstract) for an optical sensor diagnostic system. It would have been obvious to someone of

ordinary skill in the art to combine the device of Koprow with the feedback control system of Dunphy for the purposes of monitoring the power of the transmitted light (abstract). It is obvious and well known the art to someone of ordinary skill in the art to use the tunable laser system taught by Dunphy in a WDM network in order to provide feedback and power stabilization for the optical signals traversing the WDM network.

Claim 9

Koprow substantially teaches the claimed invention except that it fails to show wavelength to optical power converter further comprising a tunable light source, an optical sensor and a processor with a corresponding relationship between said optical power and said wavelength to form a wavelength detecting system of a Wavelength Division Multiplexing (WDM) network for measuring said wavelength and monitoring said WDM network. Dunphy shows that it is known to provide a tunable light source, an optical sensor and a processor with a corresponding relationship between said optical power and said wavelength (abstract) for an optical sensor diagnostic system. It would have been obvious to someone of ordinary skill in the art to combine the device of Koprow with the feedback control system of Dunphy for the purposes of monitoring the power of the transmitted light (abstract). It is obvious and well known the art to someone of ordinary skill in the art to use the tunable laser system taught by Dunphy in a WDM network in order to provide feedback and power stabilization for the optical signals traversing the WDM network. Official notice taken. It is the position of the Office that it is well known to in the art that conventional WDM networks contain light sources, and typically these light sources each have monitoring photodiodes or equivalent in order to monitor the laser source wavelength **and** intensity (power). Therefore, it is the position of the office that the

references of Koprow in view of Dunphy meet both the structural and functional limitations of the claim.

3. Claim 10 rejected under 35 U.S.C. 103(a) as being unpatentable over Koprow in view of Mao (USPN '594).

Claim 10

Koprow substantially teaches the claimed invention except that it fails to show a wavelength to optical power converter further comprising a Wavelength Division Multiplexing (WDM) multiplexer, an optical access multiplexer, a Wavelength Division Multiplexing (WDM) demultiplexer, a first attenuator and a second attenuator and two Erbium-doped fiber amplifiers (EDFAs) to form a network attenuator of a Wavelength Division Multiplexing (WDM) network. Mao shows that it is known to provide a Wavelength Division Multiplexing (WDM) multiplexer, an optical access multiplexer, a Wavelength Division Multiplexing (WDM) demultiplexer, a first attenuator and a second attenuator and two Erbium-doped fiber amplifiers (EDFAs) (col. 8, lines 9-48) for an multichannel optical transmission system. It would have been obvious to someone of ordinary skill in the art to combine the device of Koprow with the multiple wavelength bi-directional lightwave amplifier of Mao for the purposes of automatically and adaptively adjusting the gain characteristics to flatten frequency response (col. 8, lines 30-34).

Allowable Subject Matter

4. Claims 3, 7, & 16-27 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 3, the prior art fails to disclose or make obvious "a wavelength to optical power converter wherein said fixed radius of said cylinder is smaller than 10 mm when said optical wavelength signal is in the range between 750 nm and 1300 nm, and said fixed radius of said cylinder is more than 10 mm when said optical wavelength signal is in the range between 1300 rim and 1750 nm".

Regarding claim 7, the prior art fails to disclose or make obvious "wavelength to optical power converter further comprising a fluorescent sensing head and an optical sensor to form a medical sensor of a medical sensing system".

Regarding claims 16-27, the prior art fails to disclose or make obvious the **mathematical equation** (on page 16, line 21 of the specification) in claim 16 and the **mathematical equations** for the conversion relationships between the wavelength and optical power (paragraphs [0071] of specification) for claims 17-27 and in combination with the other recited limitations of claims 16-27, respectively.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for

Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juan D Valentin II whose telephone number is (703) 605-4226. The examiner can normally be reached on M-Th., Every other Fr..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on (703) 308-4881. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308- 0955.

Juan D Valentin II
Examiner 2877
JDV
July 28, 2003

Frank G. Font
Supervisory Patent Examiner
Technology Center 2800